

WHAT IS CLAIMED IS:

1. An actuator for connection to a harness including a signal line covered by a coating, the actuator comprising:

5 a connector body including an input terminal and an output terminal; and

a cover attached to the connector body to hold the harness with the connector body; wherein

10 at least one of the connector body and the cover includes a cutting portion arranged between the input terminal and the output terminal to cut the signal line of the harness into two cut pieces when attaching the connector body and the cover to each other; and

15 the input terminal and the output terminal each include two contact portions that penetrate through the coating of the signal line of the harness to contact one of the two cut pieces of the signal line when attaching the connector body and the cover to each other.

20 2. The actuator as claimed in claim 1, wherein the cutting portion includes an insulator for preventing the two cut pieces of the signal line from being electrically connected with each other.

25 3. The actuator as claimed in claim 2, wherein the insulator is integrally formed with at least one of the connector body and the cover.

30 4. The actuator as claimed in claim 2, wherein the insulator includes a distal end and a tapered portion that narrows toward the distal end.

5. The actuator as claimed in claim 2, wherein the

cutting portion is a metal cutter insert molded in the connector body along with the input terminal and the output terminal.

5           6.    The actuator as claimed claim 5, wherein the cutter has a surface coated by a coating layer formed from an insulative material.

10           7.    The actuator as claimed claim 1, wherein the connector body includes two power supply terminals; the harness includes two power supply lines, each extending parallel to the signal line and being covered by a coating; and

15           the two power supply terminals each have a contact portion that penetrates through the coating of an associated one of the power supply lines to contact the associated power supply line when attaching the connector body and the cover to each other.

20           8.    The actuator as claimed in claim 1, wherein the cutting portion is made of an insulative material.

25           9.    The actuator as claimed in claim 1, wherein the cutting portion includes a blade having a W-shaped upper end.

          10.   The actuator as claimed in claim 1, further comprising:

30           a switch connected between the input terminal and the output terminal; and

          a control circuit connected to the switch, in which the control circuit is operable for setting an address value for itself, wherein

the control circuit sets an initial value, opens the switch to disconnect the input terminal and the output terminal from each other, changes the initial value to a predetermined value that is used as the address value, and  
5 closes the switch to connect the input terminal and the output terminal to each other.

11. An actuator for connection to a harness including a signal line covered by a coating, the actuator comprising:  
10 a connector used to connect the actuator to the harness, the connector including:

a connector body including a first groove, which is shaped in correspondence with the harness, and an input terminal and an output terminal, which are  
15 arranged in the first groove;

a cover for holding the harness with the connector body, the cover including a second groove corresponding to the first groove; and

a cutting portion arranged between the input  
20 terminal and the output terminal in at least one of the first groove of the connector body and the second groove of the cover, the cutting portion cutting the signal line of the harness into two cut pieces when attaching the connector body and the cover to each  
25 other, the input terminal and the output terminal each including:

two contact portions that penetrate through the coating of the signal line of the harness to contact one of the two cut pieces of the signal  
30 line when attaching the connector body and the cover to each other.

12. The actuator as claimed claim 11, wherein the

cutting portion includes an insulator having a distal end and a tapered portion that narrows toward the distal end, and a blade having a W-shaped upper end.

5           13. The actuator as claimed in claim 11, wherein  
the connector body includes a third groove and a fourth  
groove shaped in correspondence with the harness, a first  
power supply terminal arranged in the third groove, and a  
second power supply terminal arranged in the fourth groove;  
10           the cover includes a fifth groove corresponding to the  
third groove and a sixth groove corresponding to the fourth  
groove;

the harness includes a first power supply line,  
associated with the third and the fifth grooves and covered  
15 by a coating, and a second power supply line, associated  
with the fourth and sixth grooves and covered by a coating;

the first power supply terminal includes a first  
contact portion that penetrates through the coating of the  
first power supply line to contact the first power supply  
20 line when attaching the connector body and the cover to each  
other; and

the second power supply terminal includes a second  
contact portion that penetrates through the coating of the  
second power supply line to contact the second power supply  
25 line when attaching the connector body and the cover to each  
other.

14. An actuator system comprising:

a harness including a signal line covered by a coating;  
30 and

a plurality of actuators connected to the harness, each  
of the actuators including:

a connector body including an input terminal and

an output terminal; and

a cover for holding the harness with the connector body; wherein

at least one of the connector body and the cover includes a cutting portion to cut the signal line of the harness into two cut pieces when attaching the connector body and the cover to each other, and

the input terminal and the output terminal each include two contact portions that penetrate through the coating of the signal line of the harness to contact one of the two cut pieces of the signal line when attaching the connector body and the cover to each other.

15. A connector for connecting a plurality of devices by way of a harness including a signal line covered by a coating, the connector comprising:

a connector body including an input terminal and an output terminal; and

a cover for holding the harness with the connector body, wherein

at least one of the connector body and the cover includes a cutting portion arranged between the input terminal and the output terminal to cut the signal line of the harness into two cut pieces when attaching the connector body and the cover to each other, and

the input terminal and the output terminal each include two contact portions that penetrate through the coating of the signal line of the harness to contact one of the two cut pieces of the signal line when attaching the connector body and the cover to each other.

16. The connector as claimed in claim 15, wherein the

cutting portion includes an insulator for preventing the two cut pieces of the signal line from being electrically connected to each other.

- 5        17. The connector as claimed in claim 16, wherein the cutting portion is a metal cutter insert molded in the connector body along with the input terminal and the output terminal.